INFRASTRUCTURE FOR TECHNOLOGY

EXECUTIVE SUMMARY

The establishment of an infrastructure for technology is fundamental to undertaking many of the Actions and Recommendations that precede this section. In this plan for technology, the infrastructure consists of two complementary components.

The Components of an Infrastructure for Technology
One component focuses on technological aspects. Often called the "boxes and wires," these are the hardware and the connecting peripherals that cause the hardware to function properly, such as the network connections and the resulting communications capabilities. Also relevant are the software, including applications programs, such as graphics or spreadsheet, and the content, such as the TEKS.

The second — and equally important — component of the infrastructure for technology is the human infrastructure. This refers to the capabilities or proficiencies of those who use the technical components.

The two aspects work symbiotically to create communication and enhanced skills and knowledge among public education stakeholders. The ultimate result is networks of people and information made possible by networks of telecommunications.

Establishing a Comprehensive System
To achieve these networks, it is the responsibility of the Texas Education Agency to first take a leadership role in establishing the comprehensive state technology system that undergirds and makes possible the communications among students and educators, the data distribution and analysis, the just-in-time professional development, and the other key factors conveyed in this long-range plan for technology that are discussed in the previous sections.

Coordination with other state agencies, regional and local education agencies, and the private sector will be of paramount importance in determining connectivity and the technical, functional, and other standards for this system. Coordination will also be needed to ensure that access will be equitable statewide.

Concomitant with this effort will be the actions necessary to ensure that students and educators acquire the proficiencies they need to take advantage of the technology infrastructure. In the long term, the state will also need to develop policies regarding public access to the data and to the educational resources available through the infrastructure.

The Regional and Local Roles
Regional education service centers should take responsibility for participating in planning and supporting the technology infrastructure. Each center should also raise the level of expertise of educators and technical staff at the schools and districts in its use and maintenance.

It is at the local level where the greatest use and, perhaps, the greatest benefits will accrue. To reap these benefits, school districts will need to determine the funding mechanisms that best fit local conditions for acquiring,

maintaining, and recycling workstations and other technologies.

They will also benefit most by implementing the ratios of workstations to students and educators introduced above and by determining how best to deploy the workstations to ensure universal accessibility.

Many Roles in Technology and Education
It will be incumbent on institutions of higher education to prepare pre-service educators with the skills they need to integrate the technology infrastructure into teaching and learning, instructional management, professional development, and administration.

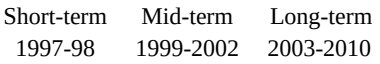
The private sector — the developers and vendors of the technology systems, the instructional materials, and the training and other services — is asked to work closely with the public education system to provide products appropriate for students, educators, and managers at favorable prices.

Finally, as conveyed in the previous sections, entire communities will benefit by seeking access to the wealth of information and services that will be available on the networks.

INFRASTRUCTURE FOR TECHNOLOGY

ACTIONS AND RECOMMENDATIONS

State



Actions by the Texas Education Agency

IT.TEA.1-11

.1 Take a leadership role in the development and implementation of a comprehensive state technology system providing voice, video, and data capabilities and ensuring equitable access by all districts and campuses

.2 Establish and maintain a coordinating mechanism with the Department of Information Resources, Telecommunications Infrastructure Fund Board, General Services Commission, State Library, and other state agencies and associations, as appropriate

.3 Identify or develop compatibility and capacity guidelines and standards for technology and infrastructure in schools and for systems that support it

.4 Review and revise compatibility and capacity guidelines and standards

.5 Provide means to support student and staff collaboration, including access, connectivity, information services, training, and support

.6 Ensure that educator and student workstation ratios are met

.7 Incorporate standards for students' and educators' technology proficiencies into the curriculum

.8 Provide state funding of regional education service centers for information dissemination, preview centers, technical assistance for planning, support and management of state initiatives, and a clearinghouse for model and promising practices

.9 Report local technology infrastructure factors, including ratios of educators and students to workstations, for inclusion in the Academic Excellence Indicator System (AEIS)

.10 Provide leadership for replacement or repositioning of obsolescent technology

.11 Develop standards and policies for access by parents and community members to the technology infrastructure, including maintaining confidentiality of information, and providing access to data and learning resources

State (cont'd)

	Short-term 1997-98	Mid-term 1999-2002	Long-term 2003-2010
Recommendations to Other State Agencies			
IT.OSA.1-2			
.1 Participate in the development and implementation of a comprehensive state technology system with voice, video, and data capabilities		→	
.2 Establish full universal connectivity with state technical standards			→

Regional

	Short-term 1997-98	Mid-term 1999-2002	Long-term 2003-2010
Recommendations to Regional Education Service Centers			
IT.RESC.1-4			
.1 Design, install, and maintain a technology and telecommunications infrastructure for communications and service	→	→	→
.2 Maintain expertise for supporting schools, districts, and staff in planning for and using technology	→	→	→
.3 Provide a forum for regional collaboration	→	→	→
.4 Offer technical assistance to schools for technology planning and for integrating technology into all campus and district plans	→	→	→

Local

	Short-term 1997-98	Mid-term 1999-2002	Long-term 2003-2010
Recommendations to Local Education Agencies			
IT.LEA.1-5/15			
.1 Investigate multiple financial arrangements for securing and recycling workstations and other technologies	→	→	→
.2 Meet the technology equipment targets for students adopted in the *Long-Range Plan for Technology, 1988-2000* of a student-to-workstation ratio of 4:1	→		
.3 Meet the technology equipment target of a student-to-workstation ratio of 3:1		→	
.4 Meet the technology equipment target of a student-to-workstation ratio of 1:1			→
.5 Meet the technology equipment target of an educator-to-workstation ratio of 1:1	→		

Local (cont'd)

	Short-term 1997-98	Mid-term 1999-2002	Long-term 2003-2010
Recommendations to Local Education Agencies (cont'd)			
IT.LEA.6-15			
.6 Provide access to appropriately configured workstations to students and staff in libraries, school offices, and in other work areas, ensuring accessibility for disabled students and staff	→	→	→
.7 Integrate planning for technology into all classroom, campus, and district planning (TEC 11.252)	→	→	→
.8 Build community support through collaborative planning, education, public information, and other means	→	→	→
.9 Provide high-speed access to the Internet for students and staff	→	→	→
.10 Seek partnerships with public and private entities	→	→	→
.11 Seek external funding for the technology infrastructure	→	→	→
.12 Commit to participate in the comprehensive state technology system		→	
.13 Maintain or retain expertise for installing and supporting an appropriate technology infrastructure		→	→
.14 Replace or reposition obsolescent technology on a scheduled basis	→	→	→
.15 Provide and maintain an infrastructure for communications with parents and community members, including access to school news, educational resources, data, and personnel		→	→
Recommendations to Communities			
IT.COM.1			
.1 Develop parent and community access to existing and emerging networks to communicate with schools	→	→	→

Higher Education

Recommendations to Institutions of Higher Education			
IT.IHE.1-3			
.1 Acquire and maintain current technology for educator preparation facilities	→	→	→
.2 Meet or exceed national recommendations for infrastructure, faculty proficiencies with technology, and student access to learning and information resources by technology	→	→	→
.3 Establish conferencing systems, compatible with schools' systems, that meet state public school technical guidelines and standards			→

Private Sector

	Short-term 1997-98	Mid-term 1999-2002	Long-term 2003-2010
Recommendations to the Private Sector			
IT.PS.1-2			
.1 Provide favorable pricing and services to schools to support infrastructure	→	→	→
.2 Establish conferencing systems, compatible with schools' systems, that meet state public school technical guidelines and standards		→	→

Other Groups

	Short-term 1997-98	Mid-term 1999-2002	Long-term 2003-2010
Recommendations to Other Groups			
IT.OG.1			
.1 Access existing and emerging networks to communicate with schools, libraries, medical facilities, agencies, and other sources of information		→	→